United States Patent [19]

Freese

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[54] **APPARATUS FOR MEASURING THE AXIAL LENGTH OF AN EYE**

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[51] **Int. Cl.**[3] **A61B 10/00**

[52] **U.S. Cl.** **128/660**; 73/611; 73/616

[58] **Field of Search** 128/660-663; 73/611-618

[56] **References Cited**

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[57] **ABSTRACT**

An apparatus for measuring the axial length of the eye is disclosed. The apparatus comprises circuitry for transmitting repetition ultrasonic pulses along the ocular axis of the eye and for receiving echo pulses reflected from the retina of the eye. The reflected echo pulses are then amplified. Gate circuits receive the amplified signals and pass logic signals triggered by retinal echo pulses exceeding predetermined thresholds. A digital counter displays the axial length of the eye as a function of a distance travelled by the retinal echo pulses. A time slot is generated during which echo pulses originating from the posterior wall of the eye can be received, and an echo triggered gate width generator enables the passage of logic signals triggered by retinal echo pulses exceeding a threshold in the generated time slot. The echo-triggered gate width generations also connected to a latching circuit, thereby preventing mistriggering of the echo triggered gate width generator by echoes originating from structures behind the retina.

8 Claims, 3 Drawing Figures